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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,105	02/11/2004	Toshiyuki Sudo	1232-5281	2823
27123	7590	10/16/2006	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			CHANG, AUDREY Y	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,105	<b>Applicant(s)</b> SUDO ET AL.	
	<b>Examiner</b> Audrey Y. Chang	<b>Art Unit</b> 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-14 is/are pending in the application.
- 4a) Of the above claim(s) 7, 8 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6, 9-11, and 13-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **August 10, 2006** has been entered.
2. By this amendment, the applicant has amended claims 1, 4-5, 9-11 and has newly added claims 13 and 14. The applicant is respectfully noted that the **newly added claims should not have been underlined.**
3. **Claims 7, 8 and 12 are withdrawn** from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 12, 2005.
4. Claims 1, 4-6, 9-11 and 13-14 remain pending in this application.

### *Response to Amendment*

5. The amendments filed **March 7, March 23, 2006 and August 10, 2006** are objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:.

**Claim 1 has been amended** to include the feature "state selective regions including at least a first state selective region and second state selective regions that selectively transmit an incident light from the display device according to the state of the incident light". The specification fails to teach that the stereoscopic image display is capable of being established by having each state-selective region

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selectively transmitting an incident light according to a **state** of the incident light. In fact the state-selective regions have to be arranged so that regions are **alternatively** transmitting one particular state and its **orthogonal** state of the incident light in order to allow right eye image light to be transmitted to right eye and left eye image light to be transmitted to left eye.

**Claim 1 also have been amended** to include the phrase “pixel states” that are not supported by the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Drawings***

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “mage pixels having a plurality of pixel state” and “pixel groups being defined by a plurality of number of image pixel states” , the pixels being arranged with plurality of columns and rows and the corresponding “state selective regions” that also arranged in columns and rows to allow the stereoscopic viewing be provided as recited in amended claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 1, 4-6, 9-11 and 13-14 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The reasons for rejection based on the newly added matters are set forth in the paragraph above.

9. **Claims 1, 4-6, 9-11 and 13-14 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

**Claim 1 has been amended** to include the phrases “an array of image pixels having a plurality of pixel states” and the phrase “state selective regions including at least a first state selective region and a second state selective regions that selectively transmit incident light from the display service according to the state of incident light”. It is not clear how could the stereoscopic image ever be provided by such arrangement. What is considered to be pixel state and what are the state of the incident light?

**Claim 1 have been amended** to include a lot of confusing phrases for describing the display device yet it lacks any single crucial and critical connection between the pixels on the display device and the optical separating member to make the stereoscopic image enable.

The specification and the claims **fail** to teach how could the stereoscopic display can be established by simply having a plurality of state-selective regions wherein **each** state-selectively transmitting an incident light according to **a state of the incident light** from the display device. This statement means the state-selective regions can only transmit incident light of one state.

**Firstly**, the claims fail to identify what is this or are theses states of the incident light and **where** do these states come from for the state-selective regions capable to select. **The applicant is respectfully noted that the incident light has to be first coded to have certain states before the selection can ever be performed. The claims fail to disclose such critical element to achieve such.** For instance, if the state is referred to polarization, then the image light has to be first polarized by using **polarizers**. The recited “pixel states” is not enable automatically. Certain means are needed to code it to have different state.

**Secondly**, in order for the left eye image light to be directed to left eye viewing locations and the right eye image light to be directed to the right eye viewing locations, respectively, the left eye image light and the right eye image light have to be coded to have **orthogonal optical states** with respect to each other. For instance the left eye image light is coded to be S-polarized and right eye image light is coded to be P-polarized.

**Thirdly**, the horizontal separating member including plurality of partial separating regions such that each partial separating region having a plurality of state-selective regions wherein the state-selective regions must **first** have state selectivity *according* to the **coding** of the image light, (i.e. polarization or color etc.), such that each region is **transmitting** one particular state of the left or right image light and **blocking** the other state of the left or right image light. The adjacent regions are arranged to transmit

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different state of the image light. For instance, the first region transmits S-polarized light and block the P-polarized light and the second region has to transmit P-polarized light and block the S-polarized light so that the left eye and right eye image light can be separated via different regions and be directed to left eye and right eye viewing regions respectively. Without such **partial transmitting and partial blocking** property for the optical separating member, the stereoscopic image cannot be provided.

The specification fails to teach how could the display device that is comprised of pixels that are arranged in *rows and columns* (i.e. two-dimensional arrangement of the pixels of the display) and the separating member having these state selective regions are able to provide stereoscopic image display. There is not structural relationships between the rows and columns of the pixels and the locations of the state selective regions to make the image light properly directed to the eyes of the observer. It is also not clear how could the “*vertical separating member*” operate with the pixels of different parallax image pixel groups and different “pixels states” that is possible to provide the stereoscopic image display. The two dimensional arrangements of the columns and rows of the pixels require the optical separating member having the state selective regions to be arranged both horizontally and vertically.

It is not clear how does the “mask of a plurality of slit apertures which are oblong in the horizontal direction and are arranged repeatedly in the vertical direction” as recited in claim 14 function with the separating member and the display pixels, image pixels having column and row arrangement as recited in claim 1 to provide the stereoscopic image display.

At this juncture, the claims are not enabling for the stereoscopic image display. In particularly, the critical criterion for the left eye image and right eye image be separated from each other and be selectively directed to different viewing regions according to left eye and right eye positions is NOT established and NOT enabled by the disclosure and the claims.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. **Claims 1, 4-6, 9-11 and 13-14 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 has been amended to include the following phrases: “array of display pixels”, “plurality of parallax images”, “an array of image pixels having a plurality of pixel states”, and “pixels groups” that are confusing and indefinite since it is really now clear how are they related and what are these display pixels, image pixels and pixels groups? What is considered to be “pixels states”? The pixels are referred to image elements, it is not clear what then is considered to be the pixels states? What are these states? How can the pixels have states of their own? Some sort of coding scheme are needed to make the image light has certain optical states encoded.

The amended phrases “an arrange of image pixels having plurality of pixels states and being arranged in column and rows, image pixels of the same column and row location in each parallax image array being grouped to from pixel groups on the display device” is completely **confusing** and **indefinite** since it is really not clear what are these image pixels, (i.e. how do they relate to the display pixels) and how could the image pixels of the same column and row (i.e. just one element) is able to be grouped to form pixel groups? What is considered to be the image pixels of the same column and row location in each parallax image array? What does it mean that each “pixel group being defined by a plurality of rows corresponding to the number of image pixel state”? And it is not clear what does it mean by “each image pixel being divided into the number of image pixels states”?

The paragraph concerning the “a display device” recited in claim 1 is really confusing and indefinite it is impossible to make out what exactly the applicant is intended to claim. The scopes of the claims therefore are extremely confusing and indefinite.

The phrase “predetermined pixel of the display device” recited in claim 13 is confusing and indefinite since it is not clear what are these pixels referred to? Image pixels or display pixels?



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Claim 10 is wrong that the stereoscopic image display cannot be provided by just having an image pixel displayed.

*The applicant is respectfully requested to clarify all the confusions and discrepancies to make the claims in comply with the requirements of USC 112, first and second paragraphs. The claims really cannot be examined here since it is impossible to determine what being displayed on the display device.*

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 1, 4-6, 9-11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima et al (PN. 5,875,055) in view of the patent issued to Nose et al (PN. 5,991,074)**

*Claim 1 has been significantly amended that make the scopes of the claims completely unclear. It really cannot be examined here with details and can only be examined in the broadest interpretations.*

Claim 1 and its dependent claims are rejected under 35 USC 112, first paragraph, with respect to new matters rejection and not enabling rejection, (please see the reasons stated above); they can therefore only be examined in the broadest interpretation.

**Morishima et al** teaches a *stereoscopic image display apparatus* that is comprised of a *liquid crystal display device* (1, Figures 1, 2A and 2B) serves as the *display device* for displaying a plurality of

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*parallax images* (R and L) by different pixels and *a polarization optical element* (2) having a plurality of *partial separating regions* which extended in horizontal direction (please see Figures 7C and 8C) having a plurality of *state-selective regions* (2-A and 2-B) that are arranged along horizontal wherein each of the state-selective regions selects to transmit one state of the incident image light and blocks the other state of the incident image light corresponding to the parallax images displayed on the display device. In particularly, Morishima et al teaches that the polarization state-selective regions 2-A transmits light of a *first* polarization state and the polarization state-selective regions 2-B transmits light a *second* polarization state wherein the first and second polarization states are different from each other. Morishima et al teaches that the polarization optical element (2) in combination with the “pi” cell (30) enable the parallax images be transmitted through the state-selective regions to different viewing region such as right eye and left eye of the observer, (please see columns 5-8) to enable stereoscopic image viewing.

**Claim 1 has been amended** to include phrases concerning how the parallax images that have been coded with different optical states are displayed on the display device. However the paragraph concerning the arrangement is completely confusing to make any sense out of it, it therefore can only be examined in the broadest interpretation. It is implicitly true that the image pixels of the parallax images having different optical state coding are being arranged in corresponding to optical state selective regions in the separating member to allow the proper parallax image pixels to be directed to the proper eyes for observation.

**With regard to the vertical separating member** for directing light from the pixel of the display to predetermined position of the horizontal separating member. Morishima et al teaches that the image light from the predetermined pixel is directed to the particular position of the horizontal separating member (i.e. 2A or 2B), but it does not teach explicitly to use a vertical separating member to achieve such. However, using *cylindrical* lens having vertical convergent function or using a mask having aperture slits is a common practice in the art to direct light image light from display to particular vertical position of

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horizontal separating member has horizontal extend. Such is explicitly taught by Nose et al, (please see Figure 11, 7 being cylindrical lens arranged in vertical direction with generatrix axis along horizontal direction and the 4 being the horizontal separating member or Figure 9, with 5 being the mask having aperture slits 6a). It would then have been obvious to one skilled in the art to apply the teachings of Nose et al to add additional cylindrical lens or **mask pattern** to direct the image light from the pixels to the predetermined horizontal separating member with more efficiency and to prevent cross talk between the image light from adjacent pixels. The shape of the slits or apertures of the mask are not critical in the function of separating the image light from the display device.

With regard to claim 4, these references do not teach explicitly that the magnification power of the cylindrical lens is more than 1. However such modification would have been obvious matters of design choice to ensure the image light cover the entire regions of the state-selective regions of the horizontal separating member to ensure all the image light be properly transmitted.

With regard to claim 5, Morishima et al teaches in Figure 7C teaches that the state-selective regions for selecting different state of the image light (i.e. 2A and 2B) can be arranged so that they do not correspond to each other in the vertical direction.

With regard to claim 6, Morishima et al teaches that the polarization optical element having state-selective regions (2-A and 2-B) for selectively transmitting image light of different polarization state.

With regard to claim 9, the features concerning the cylindrical lens or the mask has been addressed in the paragraph above for claim 1, concerning the vertical separating member in term of Nose et al reference.

With regard to claims 10 and 11, Morishima et al teaches that the adjacent pixels display different parallax images, (i.e. L1 and R1 as shown in Figure 7A).

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***Response to Arguments***

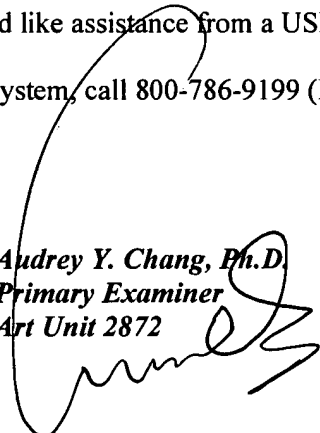
14. Applicant's arguments filed August 10, 2006 have been fully considered but they are not persuasive. The newly amended claims and newly added claims have been fully considered and they are rejected for the reasons stated above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

***Audrey Y. Chang, Ph.D.***  
***Primary Examiner***  
***Art Unit 2872***



A. Chang, Ph.D.